



# ASQ CRE Prep course

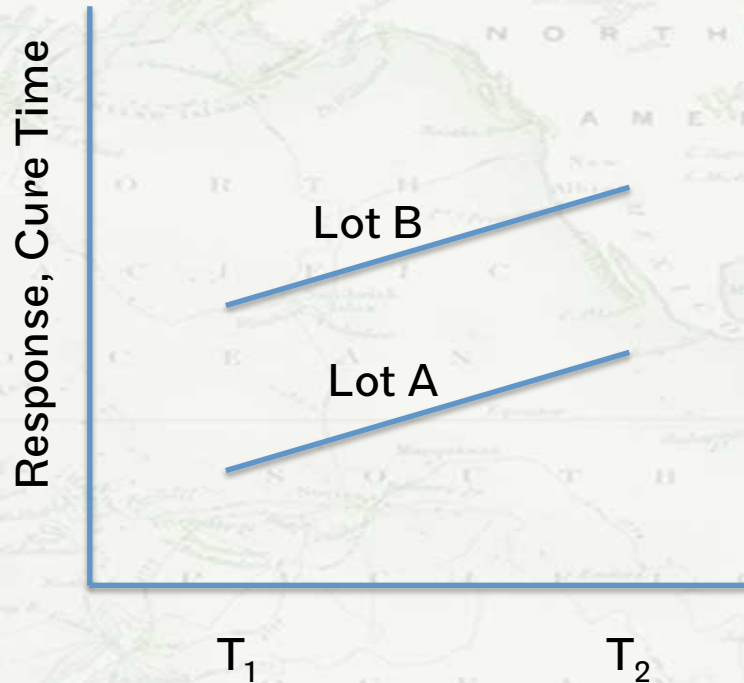
Lesson III. A. 7. g.

Design of Experiments

Interactions & Confounding

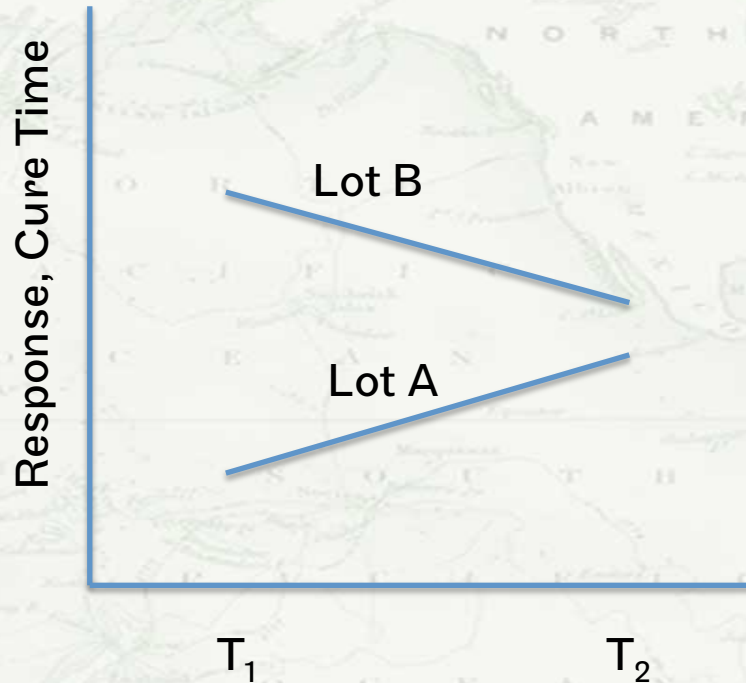
# No Interaction

**Cure time vs.  
temperature  
for an adhesive  
experiment**



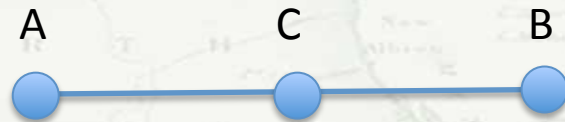
# Interaction

**Add a change in humidity to the experiment**



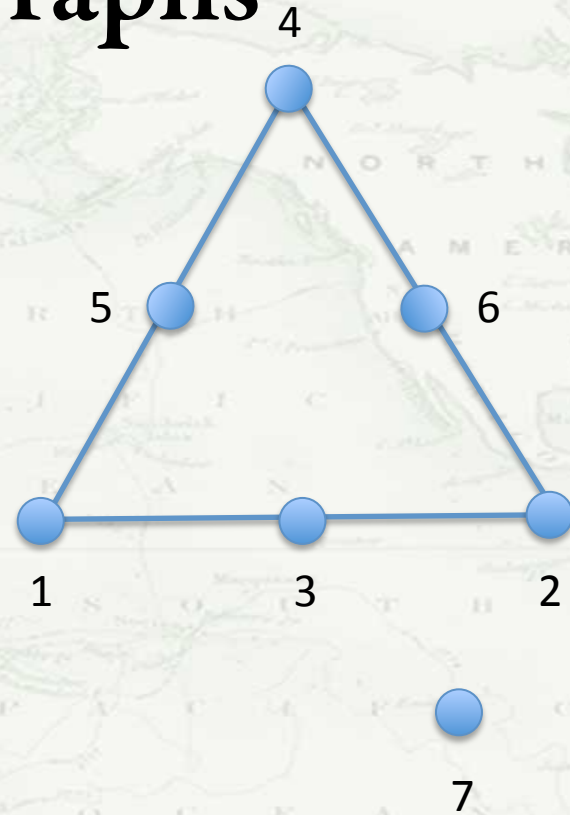
# Interactions in the $L_4$ Array

Run No	A	B	C
1	1	1	1
2	1	2	2
3	2	1	2
4	2	2	1



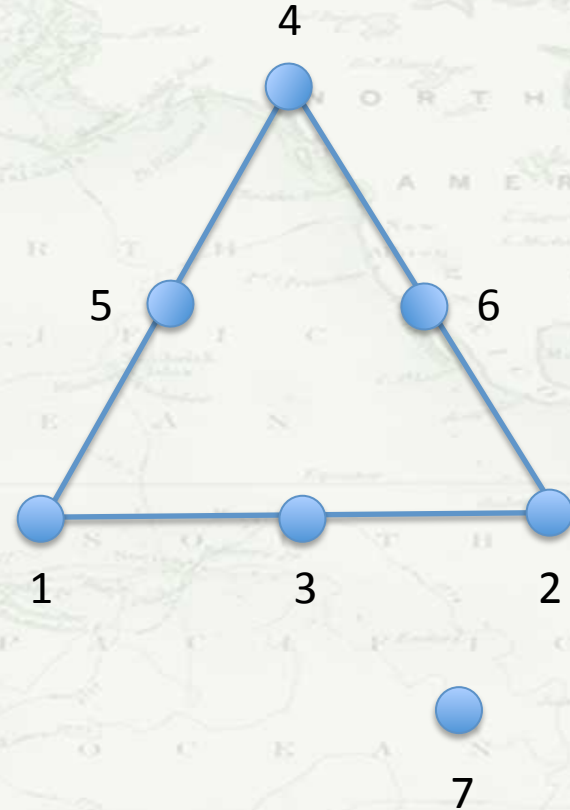
# $L_8$ Linear Graphs

run	1	2	3	4	5	6	7
1	1	1	1	1	1	1	1
2	1	1	1	2	2	2	2
3	1	2	2	1	1	2	2
4	1	2	2	2	2	1	1
5	2	1	2	1	2	1	2
6	2	1	2	2	1	2	1
7	2	2	1	1	2	2	1
8	2	2	1	2	1	1	2



# Assigning Factors to an Array

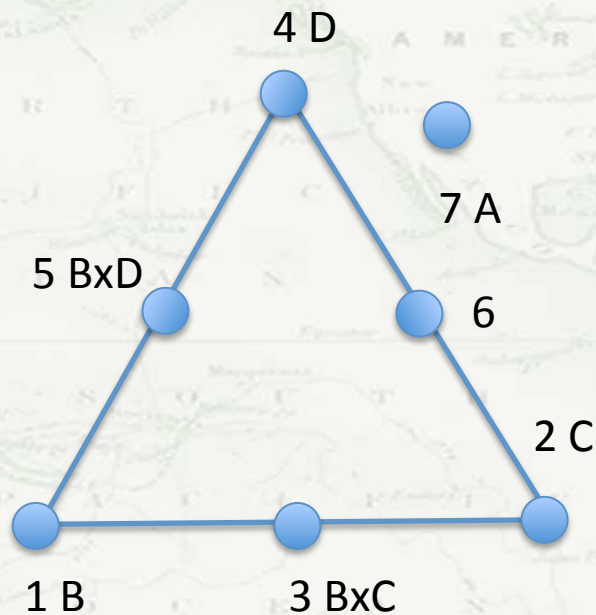
- **A, B, C, D factors**
- **B x C and B x D interact**





run	1	2	3	4	5	6	7
1	1	1	1	1	1	1	1
2	1	1	1	2	2	2	2
3	1	2	2	1	1	2	2
4	1	2	2	2	2	1	1
5	2	1	2	1	2	1	2
6	2	1	2	2	1	2	1
7	2	2	1	1	2	2	1
8	2	2	1	2	1	1	2
	B	C	B x D	D	B x C		A

# L<sub>8</sub> Column Assignments



Getting this?





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Lesson III. A. 7. h.

Design of Experiments

Adjusting the Design